

REMARKS

Claims 1-18 are pending in this application. By this Amendment, claims 14-17 are amended for clarity. No new matter is added.

The courtesies extended to Applicant's representative by Examiner Trieu at the interview held May 26, 2010, are appreciated. The following remarks constitute Applicant's record of the interview.

The Office Action alleges that the Power of Attorney does not meet the requirements set forth in 37 C.F.R. §1.32(c)(3). Applicant respectfully disagrees.

37 C.F.R. §1.32(c)(3), as quoted in the Office Action, states in part "[i]f a power of attorney names more than ten patent practitioners, such power of attorney must be accompanied by a separate paper indicating which ten patent practitioners named in the power of attorney are to be recognized by the Office as being of record in the application or patent to which the power of attorney is directed." Such a paper was filed on September 27, 2006 and is available in the online image file wrapper. Applicant respectfully requests that the objection to the Declaration be withdrawn.

The Office Action, on page 3, suggests that claims 14-17 be revised. By this amendment, claims 14-17 have been amended responsive to the suggestion in the Office Action and as tentatively agreed during the personal interview.

The Office Action rejects claims 10-15 under 35 U.S.C. §112, second paragraph. Applicant respectfully traverses the rejection.

The Office Action alleges that claims 10-18 are allegedly "incomplete for omitting essential elements, such omission amounting to a gap between the elements," citing MPEP §2172.01. The Office Action alleges that structural connectivity of a controller unit and sensors with the engine system are omitted. Applicant admits that these elements are not recited in claims 10, 14 and 18, but such an omission does not render the claims indefinite.

"[A] claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention." MPEP §2172.01. The specification does not define the allegedly omitted features are essential. Thus, the claims are not indefinite. Additionally, "it is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrently toward the desired result." MPEP §2172.01, *citing Ex parte Nolden*, 149 USPQ 378, 380 (Bd. Pat. App. 1965). "A claim does not necessarily fail to comply with 35 U.S.C. 112, second paragraph where the various elements do not function simultaneously, are not directly functionally related, do not directly intercooperate, and/or serve independent purposes." *Id.*, *citing Ex parte Huber*, 148 USPQ 447, 448-49 (Bd. Pat. App. 1965). Thus, Applicant submits that claims 10-18 are definite.

Additionally, breadth of a claim is not to be equated with indefiniteness. *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971). Undue claim breadth is better analyzed under the novelty, obviousness, written description or enablement requirements. MPEP §2173.04. Indefiniteness of a claim is determined in light of the entire specification, not reading the claim in a vacuum. *Energizer Holdings, Inc. v. ITC*, 435 F.3d 1366, 1370 (Fed. Cir. 2006). So long as one of ordinary skill would have understood the scope of the claim in light of the specification, the claim complies with the requirements of 35 U.S.C. §112, second paragraph. *Id.* at 1369-70. Indeed, unless a claim is "insolubly ambiguous," the claim is not invalid for indefiniteness. See MPEP §2173.02, *citing Metabolite Labs., Inc. v. Lab Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 71 (Fed. Cir. 2004). Thus, Applicant respectfully requests withdrawal of the rejection.

The Office Action rejects claim 10-12, 14-16 and 18 under 35 U.S.C. §103(a) over Saito et al., JP-A-2003-206722. Applicant respectfully traverses the rejection.

Claim 10 recites "a supercharger which includes a turbine that is provided in the exhaust passage at a position upstream of the catalyst." Claims 14 and 18 recite similar features. The Office Action admits that Saito "fails to disclose the position of the turbine being provided in the exhaust passage at a position upstream of the catalyst having an oxidizing ability, or the position of the catalyst having an oxidizing ability and being provided in the exhaust passage at a position downstream of turbine." To make up for this deficiency, the Office Action simply alleges "the positioning of the turbine being in the exhaust passage at a position upstream of the catalyst having an oxidizing ability, or the positioning of the catalyst having an oxidizing ability and being provided in the exhaust passage at a position downstream of the turbine in the above claimed positions would have been obvious to one having ordinary skill in the art." The Office Action alleges that "the arrangement of these devices would have reduced exhaust emissions." Yet, nothing in any of the applied references nor any evidence provided by the Examiner suggests that changing the arrangement of Saito's turbine and catalyst would reduce exhaust emissions. That is, nothing in any of the applied references suggests that moving Saito's catalyst to upstream of Saito's turbine would reduce emissions. Thus, there is no basis for the allegation in the Office Action that the arrangement of these devices would have reduced exhaust emissions.

Because the Office Action admits that Saito fails to disclose all of the features of claims 10, 14 and 18 and has failed to provide a factual basis why one of ordinary skill in the art allegedly would have rearranged the components of Saito, claims 10, 14 and 18 would not have been obvious in view of Saito. Applicant respectfully requests withdrawal of the rejection.

The Office Action rejects claims 10-12, 14-16 and 18 under 35 U.S.C. §103(a) over Saito in view of either Kobayashi et al., JP-A-2003-278536, or Nagae, JP-A-2002-070536. Applicant respectfully traverses the rejection.

In justifying the combination of references, the Office Action alleges that the combination would have been obvious to one having ordinary skill in the art "to prevent/solve a clogging/accumulating of particulate matter or soot when the exhaust gas is to be discharged to the atmosphere." In the alternative, the Office Action alleges that the combination "would have yielded predictable results, namely, to prevent/solve a clogging/accumulating of particulate matter or soot when the exhaust gas is to be discharged to the atmosphere." Applicant respectfully disagrees.

As discussed in the present specification, arranging a turbine and catalyst as claimed presents technical difficulties which are neither disclosed nor addressed in the prior art of record. As discussed in the present specification, in an "internal combustion engine including a centrifugal supercharger, even when the temperature of the exhaust gas released from the internal combustion engine is increased, the energy of the exhaust gas is used for increasing a rotational speed of a turbine. Accordingly, the temperature of the exhaust gas flowing from the NOx catalyst cannot be increased sufficiently. Also, as the energy of the exhaust gas is used for increasing the rotational speed of the turbine and therefore the rotational speed of the turbine increases, a rotational speed of a compressor also increases and an amount of air taken in a cylinder increases. Accordingly, the intake air amount needs to be adjusted by decreasing an opening amount of an intake throttle valve. As a result, a pumping loss of the internal combustion engine increases, which causes deterioration of fuel efficiency." Applicant's specification at page 2, line 28 - page 3, line 4. Thus, the applied references fail to recognize a problem in the prior art. "In order to address this problem, a technology is proposed, in which a variable nozzle provided in the centrifugal supercharger or a wastegate valve is fully open such that the energy of the exhaust gas is prevented from being used for increasing the rotational speed of the turbine." Applicant's specification at page 3, lines 5-8. With this potential solution to the problems with the prior art, "an amount of energy of the exhaust gas,

which is used for increasing the rotational speed of the turbine, decreases. As a result, the intake air amount becomes smaller than that before the variable nozzle or wastegate valve is fully opened, which may cause an increase in amount of smoke." Applicant's specification at page 3, lines 12-15. None of the applied references recognize this problem or propose a solution to the problem. Thus, Applicant discovered the source of the problem solved by the claimed invention. This is part of the "subject matter as a whole" that must be considered by the examiner. *See* MPEP §2141.02(III) and (IV). Thus, the combination of references would not have been obvious as alleged in the Office Action. Applicant respectfully requests withdrawal of the rejection.

The Office Action rejects claims 13 and 17 under 35 U.S.C. §103(a) over Saito in view of Kobayashi or Nagae and Kawamoto, JP-A-2003-120353. Applicant respectfully traverses the rejection.

Claim 13 recites "the turbine rotation controller decreases the amount of energy of the exhaust gas ... when a value detected by the intake air amount detector or the intake air pressure detector after the after-injection is performed is higher than a value detected by the intake air amount detector or the intake air pressure detector before the after-injection is performed." In rejecting claim 13, the Office Action alleges that Kawamoto discloses these features in paragraph [0030]. Applicant respectfully disagrees.

In the cited portion of Kawamoto, "after-injection" is adjusted based on the boost pressure. This is different from the present application wherein the turbine rotation controller decreases the amount of energy of the exhaust gas. Thus, Kawamoto fails to disclose the features of claim 13 as alleged in the Office Action and the Office Action fails to provide reasoning why these features would have been obvious.

Claim 17 recites "decreasing the amount of energy of the exhaust gas...when a value detected by the intake air amount detector or the intake air pressure detector after the after-

injection is performed is higher than a value detected by the intake air amount detector or the intake air pressure detector before the after-injection is performed." Thus, claim 17 is patentable at least for the reasons discussed above with respect to claim 13. Applicant respectfully requests withdrawal of the rejection.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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